DETAILED ACTION

Status of the Claims

Claims 38, 40-77, and 79-111 are pending.

Priority

Instant application 10/597,583 filed 04/22/2010 is a 371 National Stage entry application of PCT/US2005/02572 filed 01/19/2005, which claims benefit of 60/540,361 filed 01/30/2004. Note that the international filing date on the PCT application is 01/13/2005.

REQUIREMENT FOR UNITY OF INVENTION

As provided in 37 CFR 1.475(a), a national stage application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept ("requirement of unity of invention"). Where a group of inventions is claimed in a national stage application, the requirement of unity of invention shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression "special technical features" shall mean those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art.

The determination whether a group of inventions is so linked as to form a single general inventive concept shall be made without regard to whether the inventions are claimed in separate claims or as alternatives within a single claim. See 37 CFR 1.475(e).

When Claims Are Directed to Multiple Categories of Inventions:

As provided in 37 CFR 1.475(b), a national stage application containing claims to different categories of invention will be considered to have unity of invention if the claims are drawn only to one of the following combinations of categories:

(1) A product and a process specially adapted for the manufacture of said product; or

(2) A product and process of use of said product; or

(3) A product, a process specially adapted for the manufacture of the said product, and a use of the said product; or

(4) A process and an apparatus or means specifically designed for carrying out the said process; or

(5) A product, a process specially adapted for the manufacture of the said product, and an apparatus or means specifically designed for carrying out the said process.

Otherwise, unity of invention might not be present. See 37 CFR 1.475(c)

Election/Restrictions

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I: claims 38 and 82, drawn to a process for generating novel enhanced shape encoding particles from polycrystalline silicon (polysilicon).

Group II: claims 40 and 83, drawn to novel enhanced shape encoding particles made of polysilicon.

Group III: claims 41, 58, and 60, drawn to a process for encoding the identity of microscopic particles by shape.

Group IV: claims 42-49 and 59, drawn to a novel shape enhanced particle produced from an unspecified material.

Group V: claims 50-57, drawn to a method for generating shape encoded response classes for use in assays.

Group VI: claims 61-72, 77, and 79, drawn to a generally planar shape encoded particle with independent notches whereby N notches encode for 2^N shapes.

Group VII: claims 73-76, drawn to a process for designing a photolithography mask.

Group VIII: claims 80-81, drawn to a method for using shape encoded particles for DNA analysis.

Group IX: claims 84-92, drawn to a genomic analysis method.

Group X: claims 93-101, drawn to a method for using shape encoded particles as an embedded identification for bulk materials wherein the particles are embedded into solid materials during manufacturing.

Group XI: claims 102-103, drawn to a method of using shape encoded particles with stem cells.

Group XII: claims 104-107 and 109, drawn to a shape encoded particle based combinatorial synthesis process wherein chemical moieties are synthesized on the surface of the particles.

Group XIII: claim 108, drawn to shape encoded particles with chemical moieties synthesized on their surfaces.

Group XIV: claim 110, drawn to a method of using shape encoded particles for structural geometric forensic reconstruction.

Group XV: claim 111, drawn to a method of using shape encoded particles for seeding cultured pearls.

The groups of inventions listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The technical feature linking groups I-XV is, appears to be, shape encoded particles made from a wafer comprising a micro-scale layer of polysilicon on a thinner, sacrificial silicon dioxide layer, wherein the shapes are formed with photolithography using reactive ion etching, wherein the silicon dioxide layer is dissolved with HF acid to release the particles. However, in the prior art, **Vaino et al.** (*Proc. Nat. Acad. Sci.*, 2000, 97(14):7692-7696) teaches planar, micron-scale shape encoded particles, wherein the peripheral notches do not extend more than 1/6th of the diameter of the resulting shape into a central region of the resulting shape (e.g. see Figure 1). In addition, **Linder et al.** (*J. Micromech. Microeng.*, 1992, pp. 112-132) teaches a surface micro-machining method, wherein a layer of polycrystalline silicon (polysilicon) on a thinner layer of silicon dioxide is photolithographically etched with reactive ions and then the silicon dioxide layer is dissolved away by HF acid (e.g. Figure 1 and throughout the document). It would not have involved an inventive step to modify the teaching of Linder et al. to form the shapes of Vaino et al.

Therefore, the technical feature linking the inventions of groups I-XV does not constitute a special technical feature as defined by PCT Rule 13.2 as it does not define a contribution over the prior art.

The methods of Groups I, III and V, VII, VIII, IX, X, XI, XIV and XV require materially different protocols and/or reagents to perform (e.g. Group I requires HF acid and photolithography, while Group IX requires biological probes and microwells). The compositions of inventions II, IV, VI, XII and XIII have different materials (e.g. addition of cells).

Accordingly, groups I-XV are not so linked by the same or a corresponding special technical feature as to form a single general inventive concept.

Applicant is therefore instructed to elect one Group for examination.

If the examiner has required restriction between product and process claims: Where applicant elects claims directed to the product, and the product claims are subsequently found allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder. All claims directed to a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the

requirements of 35 U.S.C. 101, 102, 103 and 112. Until all claims to the elected product are found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowable product claim will not be rejoined. See MPEP § 821.04(b). Additionally, in order to retain the right to rejoinder in accordance with the above policy, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder**. Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy Flinders whose telephone number is (571)270-1022. The examiner can normally be reached Monday through Friday, 8:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor is Ardin Marschel, who can be reached at (571)272-0718. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCF
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